

### Abstract of the Disclosure

In one embodiment, the present invention is a substrate system of photo-polymerizable monomers and bioactive molecules admixed with the monomers and shielded from the monomers by an insoluble material that undergoes a solid-gel transition

5 at body temperature. Upon polymerization, the monomers produce a cross-linked structure and the shielded bioactive molecules are protected from attack in the polymerized environment. In different aspects, the substrate system is used for drug delivery and tissue engineering and protection of enzymes, proteins and growth factors.

In another embodiment, the present invention is a drug delivery system of photo-  
10 polymerizable monomers, drug molecules associated with the monomers and shielded from the monomers by an insoluble material that undergoes a solid-gel transition at body temperature, and a photopolymerizing means for polymerizing the monomers to produce a cross-linked structure including the drug molecules.

15